

## ABSTRACT OF THE DISCLOSURE

A system for characterizing multiple power-supply circuits includes a computer. The computer characterizes energy attributes of a circuit that includes a cell. The cell couples to a plurality of power supplies and has one or more outputs that drive, respectively, one or more loads. The computer uses a model of an operation of the circuit to characterize a dynamic energy attribute of each of the plurality of the power supplies. The computer further uses the model of the operation of the circuit to characterize a dynamic energy attribute of the one or more loads. The computer calculates an overall dynamic energy attribute for the plurality of power supplies by summing together the dynamic energy attributes of the plurality of the power supplies. The computer determines an overall dynamic energy attribute for the one or more loads by adding together the dynamic energy attributes of the one or more loads. Finally, the computer obtains a dynamic energy attribute of the cell by subtracting the overall dynamic energy attribute for the one or more loads from the overall dynamic energy attribute of the plurality of power supplies.